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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,412	09/17/2003	Douglas P. Hart	MIT-002	3200
959	7590	06/07/2005	EXAMINER	
LAHIVE & COCKFIELD, LLP. 28 STATE STREET BOSTON, MA 02109			NGUYEN, THONG Q	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/664,412

Applicant(s)

HART ET AL.

Examiner

Thong Q. Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 12-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 18-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. As a result of applicant's election, claims 1-11 and 18-23 are examined in this Office action. Claims 12-17 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on May 6, 2005.

Drawings

2. The formal drawings contained eleven sheets of figures 1-9 were received on April 5, 2004. These drawings are objected by the Examiner for the following reasons.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: *First, the references "160A", "60", "Az" and "Z_f" shown in figure 4; and Second, the reference "92" and "94" shown in figures 7A-B are not mentioned in the specification.* Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: *First, the reference "160" stated in page 6, line 14; and Second, the reference "222" stated in page 10, line 4 are not shown in at least one figure.* Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to because *in figure 8, it is unclear which component(s)/part(s) does the reference "224" refer to.* Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the

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appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "220" has been used to designate both "stator" and "housing". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
8. The disclosure is objected to because of the following informalities: a) Page 7: line 27, "third" should be changed to –second–; and b) page 8, line 30 through page 9, line 1: the description thereof "The right side illustrates the illumination light path and the left side illustrates the image forming path" is unclear. What does applicant mean by "the right side" and "the left side" in the mentioned description? Applicant should note that since the figure 6A discloses two figures arranged in a vertical order, not a horizontal order, thus, it is unclear which figure should be labeled as the so-called "right side" and which figure should be labeled as the so-called "left side". There are some grammatical and idiomatic errors in the specification. Applicant should carefully proofread the specification. Appropriate correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Greenberg (U.S. Patent No. 6,020,993).

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Greenberg discloses an optical device comprising a 3-D photo attachment for the phototube of a light microscope which enables a 2-D camera port to be enhanced to take 3-D stereo pair photography. The device as described in columns 8-10 and shown in figures 10-12 comprises a microscope (102) having an objective lens system (103), a phototube (107) supporting an eyepiece system (108); an add-on phototube (116) for coupling the microscope to a camera (121). The add-on phototube as disclosed in columns 9-10 comprises a screen carrier (118) supporting a plurality of apertures (127, 128) in which some apertures are off-axis apertures. See also figures 12-12B, elements (128, 128a, 128b). Regarding to the feature related to the relay subsystem coupled between the objective lens and the image recoding device, such a feature is readable in the structure of the microscope provided by Greenberg. In other words, the optics disposed on the downstream of the objective lens system (103) will form an image of the object and then relay that image to the camera system. It is also noted that the position of the screen carrier is at the exit pupil of the microscope. See column 9.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Greenberg (U.S. patent No. 6,020,993) in view of Greenberg (U.S. Patent No. 5,706,128).

The screen carrier supporting a plurality of off-axis apertures as provided by Greenberg '993 is able to move for the purpose of placing a suitable off-axis aperture into the image forming path. However, Greenberg does not clearly disclose that the movement of the screen carrier can be made by a rotation of the carrier. However, to move the carrier by a translating manner or a rotational manner is considered as an obvious matter to one skilled in the art. It is also noted that the movement of a carrier supporting a plurality of off-axis apertures by a rotational manner is disclosed by the same inventor as can be seen in his microscope system provided in the patent No. 5,706,128. See columns 4-5 and fig. 3. Thus, it would have been obvious to one skilled in the art at the time the invention was made to utilize any suitable mechanical systems for moving the carrier in a rotational manner as suggested by Greenberg for the purpose of placing a particular off-axis aperture into a light path.

13. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenberg in view of the prior art described in columns 2-3 and shown in figure 3 of the patent issued to Nakamura (U.S. Patent No. 6,606,113).

The optical device having a microscope and an image recording system coupled to the microscope as provided by Greenberg in columns 8-10 does not disclose that the image recording system and the add-on device are used to couple them

to an endoscope or a borescope or a telescope as claimed. However, such a feature is merely that of a preferred embodiment and no criticality has been disclosed. The support for that conclusion is found in the present claim 6 in which applicant has claimed that the image recording system and the add-on device are coupled to a microscope. It is also noted that while each of claims 7-9 refers to an optical device such as a telescope, an endoscope or a borescope; however, each of the claim has not provided any structural features of the device claimed. Further, the use of a relay lens system having lens elements and an off-axis apertures in an endoscope is known to one skilled in the art as can be seen in the endoscope described in columns 2-3 and shown in fig. 3 of the patent issued to Nakamura. See the endoscope having an objective lens system (31), relay lens system (34), forming lens system (35) and off-axis apertures (36a-b), imaging lens system (37) and image recoding system (38). It is also noted that the image rerecording system used by Nakamura is a charged-coupled device. Thus, absent any showing of criticality, it would have been obvious to one skilled in the art to couple the add-on phototube and the image recording system which supports off-axis aperture as provided by Greenberg to any suitable optical device including an endoscope as suggested by Nakamura for the purpose of providing a 3-D image from a 2-D optical scope.

14. Claims 1-6, 10-11 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rohaly et al, Essay, titled "High resolution, ultra fast 3-D imaging" in view of Adachi et al (U.S. Patent No. 6,560,012).

Rohaly et al disclose an optical device for providing a 3-D imaging. The device as described in pages 1-3 and shown in figures 1-2 discloses a CCD camera having an objective lens system, an off-axis aperture and an image recoding element disposed in that order from an object side of the camera. The use of a rotating mechanism for rotating the off-axis aperture and the formation of the image with different by a rotation of the off-axis aperture by an angle of 180 degrees are disclosed by Rohaly et al as can be seen in pages 2-3. The only feature missing from the art of Rohaly et al is that they do not suggest the use of an adaptor for coupling the camera to an optical apparatus for the purpose of providing a 3-D imaging from the optical apparatus. However, the use of an adaptor for coupling an image recording system to a microscope is known to one skilled in the art as can be seen in the system provided by Adachi et al. In particular, Adachi et al disclose an optical device having a microscope, an image recording system in the form of a charged-couple device and an adaptor for coupling the image recording system to the microscope. The device as described in columns 2-5 and shown in figs. 1-4 comprises the following features: First, a microscope having an objective lens system (4); a microscope body (10) for providing light to an eyepiece lens system (13) and light to an image recording system; Second, an image recording system (16) having a ccd element (17); and Third, an adaptor (14) for coupling the image recording system to the microscope wherein the adaptor comprises a relay lens system (15) and an aperture (20) disposed on the exit pupil of the device. It is noted that the first lens component (15₁) of the relay

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lens system acts as a field lens system and the second lens component (15₂) acts as a focusing lens system. Thus, it would have been obvious to one skilled in the art at the time the invention was made to utilize the use of an off-axis aperture which is rotatable in a microscope having an image recording system and an adaptor having relay lens and aperture as provided by Adachi et al for the purpose of obtaining a 3-D imaging system.

15. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rohaly et al, Essay, titled "High resolution, ultra fast 3-D imaging" in view of Adachi et al as applied to claim 1 above, and further in view of the prior art described in columns 2-3 and shown in figure 3 of the patent issued to Nakamura (U.S. Patent No. 6,606,113).

The optical device having a microscope and an image recording system coupled to the microscope as provided by Rohaly et al in view of Adachi et al as described above does not disclose that the image recording system and the add-on device are used to couple them to an endoscope or a borescope or a telescope as claimed. However, such a feature is merely that of a preferred embodiment and no criticality has been disclosed. The support for that conclusion is found in the present claim 6 in which applicant has claimed that the image recording system and the add-on device are coupled to a microscope. It is also noted that while each of claims 7-9 refers to an optical device such as a telescope, an endoscope or a borescope; however, each of the claim has not provided any structural features of the device claimed. Further, the use of a relay lens system having lens elements and an off-axis apertures in an endoscope is

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known to one skilled in the art as can be seen in the endoscope described in columns 2-3 and shown in fig. 3 of the patent issued to Nakamura. See the endoscope having an objective lens system (31), relay lens system (34), forming lens system (35) and off-axis apertures (36a-b), imaging lens system (37) and image recoding system (38). It is also noted that the image recording system used by Nakamura is a charged-coupled device. Thus, absent any showing of criticality, it would have been obvious to one skilled in the art to couple the add-on phototube and the image recording system which supports off-axis aperture as provided by Rohaly et al and Adachi et al to any suitable optical device including an endoscope as suggested by Nakamura for the purpose of providing a 3-D image from a 2-D optical scope.

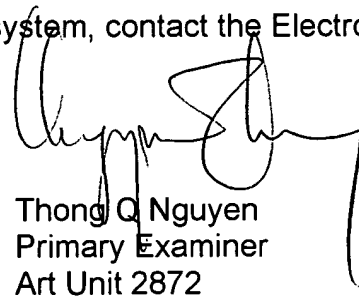
Conclusion

16. The additional references are cited as of interest in that each discloses a system for providing a 3-D images.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Nguyen whose telephone number is (571) 272-2316. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thong Q. Nguyen
Primary Examiner
Art Unit 2872
